having the specified unit as the object of the relationship is produced. Here, by specifying more than one units as the object of the relationship at the step S338, the relation unit representing the relationship among more than three terms can be produced at the step S339.

It is to be noted that the procedure similar to that described above is also applicable to a case of establishing a meta-level relationship between structures.

It is also to be noted that by expressing a relationship among more than two terms by a single relation unit as described above, the processings for more than two units related by such a multi-term relationship can be specified in a single relation unit, so that the managing of the units in the document processing system can be made more efficiently. Here, the multi-term relationship may involve an auto-regressive relationship from one unit to the same unit, so that a number of units related by the multi-term relationship could be only two.

It is also to be noted that the data to be processed in the document processing system may includes the data in a form other than the document using text data used in the above description of the third embodiment, such as speech data, figure data, table data, picture data, video data, graphic data, etc.

In a case of using these data forms, it is necessary to define a scale to describe a position of each data and a manner of specifying a portion of each data in order to specify the position and range of the portion of the data to be the object of the multi-term relationship. For example, in a case of using a still picture, the upper left corner may be chosen as an origin and a number of picture elements from the origin may be used as a scale, and the range may be specified in terms of sizes of shapes such as rectangle, circle, ellipse, etc. In a case of using speech data, a starting time of the speech data may be chosen as an origin and a time elapse since the origin may be used as a scale, and the range may be specified in terms of a length of a period of time. Moreover, when the frequency band is to be taken into account, the scale may be set up in two dimension formed by a time axis and a frequency axis, such that the range can be specified in terms of sizes of shapes on such a two dimensional scale. In a case of using dynamic images, a number of frames (or a time) and vertical and horizontal positions of each frame may be used to set up a three dimensional scale, such that the range can be specified in terms of positions and shapes of three dimensional volumes. In a case of using figure data, the figure elements may be labelled by a consecutive figure element number, such that the range can be specified by using the figure element numbers.

It is further to be noted that the relation unit for representing a multi-term relationship used in this third embodiment may be produced by using a high level language, such that it can be decomposed into two-term relationships by using a method of logic programming at a time of the compiling, so as to make it easier to manage the data units to maintain the consistency among the data units.

As described, according to this third embodiment of a document processing system, it becomes possible to provide a document processing system capable of dealing not only with the usual two-erm relationship but also with multi-term relationships among different parts of a document to be processed.

As a consequence, when there is a multi-term relationship among one parent unit and two child units sharing the same parent unit, it is possible in this third embodiment to make a direct reference from one of the child units to another one of the child units having the same parent unit, so that the operation for looking up of the reference can be simplified considerably.

Moreover, according to this third embodiment, it also becomes possible to provide a document processing system capable of dealing also with meta-level relationships among different structures in a document to be processed.

Thus, according to this third embodiment, the types of relationships that can be dealt with in the document processing system are enormously expanded compared with the conventional document processing system, and therefore it is possible to enhance the capacity of the document processing system considerably.

It is to be noted that, besides those already mentioned above, many modifications and variations of the above embodiments may be made without departing from the novel and advantageous features of the present invention. Accordingly, all such modifications and variations are intended to be included within the scope of the appended claims.

What is claimed is:

1. A document processing system, comprising:

editor means for writing, editing and displaying a document to be revised from an old version to a new version, version data indicating a modification made in the document between the new version and the old version and including an explanation of the modification, and a comment on the document; and

data managing means for retrieving and storing document data by linking the document in the new version, the document in the old version, the comment on the document, and the version data;

wherein when the editor means is activated to create a new comment while displaying the document, the data managing means automatically links the new comment created at the editor means with the document currently displayed at the editor means as an attached comment, and when the editor means is activated to revise the document from the old version to the new version while displaying the old version of the document along with at least one attached comment, the data managing means automatically links the at least one attached comment with the document in the new version as one or more influencing comments corresponding respectively to said at least one attached comment.

2. The document processing system of claim 1, wherein the editor means further comprises:

document editor means for writing, editing, and displaying the document;

comment editor means for creating, editing, and displaying the comment; and

version data display means for displaying the version data.

3. The document processing system of claim 2, wherein when the comment editor means is activated to create a new comment while the document editor means displays the document, the data managing means automatically links the new comment produced at the comment editor means with the document currently displayed at the document editor means.

4. The document processing system of claim 2, wherein when the comment editor means is activated to display the comment attached to the document while the document editor means displays the document, the comment editor means displays the comment which is linked with the